

REMARKS

Applicants have filed a Request for Continued Examination concurrently with this Reply. Applicants respectfully request withdrawal of the finality of the Office Action mailed September 20, 2006 and reconsideration of the rejections set forth therein in view of the amendments made to the claims and the following remarks.

Amendments to the Claims

Prior to entry of this amendment, Claims 1 – 5, 7 – 10, 12 – 20, 22 – 25, 27 – 39, 42 – 46 and 51 – 57 were pending in this Application. The Examiner has indicated in the prior and the Final Office Actions that claims 37 – 38 are allowable.

Independent claims 1, 16, 31, 34, 39 and 42 have been amended to address the rejections under 35 U.S.C. §112, first and second paragraphs. Applicant believes that the subject matter of these amendments is supported by FIG. 3B and the discussion accompanying FIG. 3B at pages 9 – 10 of the subject application.

Independent claims 7, 10, 12, 15, 22, 25, 27 and 30 and their respective dependent claims have been canceled without prejudice.

New claims 58 – 62, which depend from claim 1, and claim 63 which depends from claim 42, have been added. Applicant believes that the subject matter of these claims is supported by FIG. 3B and the discussion accompanying FIG. 3B at pages 9 – 10 of the subject application.

After entry of this amendment, claims 1 – 5, 16 – 20, 31 – 39, 42 and 52 – 63, including independent claims 1, 16, 31, 34, 37, 38, 39 and 42 are pending in the subject application.

Claim Rejections under 35 U.S.C. § 112, first paragraph

The Office Action has rejected claims 1 – 5, 16 – 20, 31 – 33, 34 – 36, 39 and 46 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Applicant believes that the reference to claim 46 was

intended to be independent claim 42. In particular, the Office Action states that the term "same driver" is not clear as to its meaning. The Office Action states that, to comply with the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The Office Action further states that, for purposes of the written description inquiry, the invention is whatever is now claimed, and that, for purposes of written description, one shows "possession" by descriptive means such as words, structures, figures, diagrams and formulas that fully set forth the claimed invention. The Office Action concludes by saying that such descriptive means cannot be found in the disclosure for the inventions of the base claims 1, 16, 31, 34, 39, 42 and 51. (Office Action, page 13.) Applicant has canceled claim 51, and that claim will not be further discussed herein.

Applicant has amended independent claims 1 and 42. Applicant has added the limitation reading "wherein said display further comprises at least first and second gate drivers oriented in a first direction and at least first and second data drivers oriented in a second direction different from said first direction" and "wherein a first blue emitter is connected to a first gate driver in said first direction and to a first data driver in said second direction; and wherein a second neighboring blue emitter is connected to said first data driver in said second direction." Applicant has added new dependent claims 62 and 63 which further recite that "said second neighboring blue emitter is further connected to a second gate driver in said first direction."

Applicant has also amended independent claims 16. In this independent claim, Applicant has added the limitations reading "wherein said display further comprises at least first and second gate drivers oriented in a first direction and at least first and second data drivers oriented in a second direction different from said first direction" and "wherein a first blue emitter is connected to a first gate driver in said first direction and to a first data driver in said second direction; and wherein a second neighboring blue emitter is connected to a second gate driver in said first direction and to said first data driver in said second direction."

The modifying terms “gate” and “data” in the terms “gate driver” and “data driver” were well-known in the art of display engineering at the time the subject application was filed as indicating the different function of the respective types of drivers. Applicant believes that the amended language in claims 1, 16, and 42 provides sufficient clarification as to how the blue emitters are connected to their respective drivers so as to remove any ambiguity or over-breadness in the claim language while still allowing for displays in which the gate and data drivers may be oriented in directions that are different from the orientations of these drivers in conventional display technology, consistent with Applicant’s specification at page 10.

Applicant has also amended independent claims 31, 34 and 39. In each of these claims, Applicant has added the word “column” to modify the word “driver” and “same driver.” Applicant believes that this amended language provides sufficient clarification as to how the blue emitters are connected so as to remove any ambiguity.

Applicant respectfully submits that the subject matter of these amendments is supported by FIG. 3B and the discussion accompanying FIG. 3B at pages 9 – 10 of the subject application. Therefore, as to all of the amended independent claims, Applicant respectfully submits that she has conveyed with reasonable clarity to those skilled in the art that, as of the filing date sought, that she was in possession of the invention.

For the foregoing reasons, it is believed that the amendments to independent claims 1, 16, 31, 34, 39 and 42 have provided clarity to the claims sufficient to show that Applicant was in possession of the invention as claimed as of the filing date, as required by the written description requirement of 35 U.S.C. §112, first paragraph. Applicant respectfully submits that this rejection has been overcome. Insofar as claims 2 – 5, 17 – 20, 32 – 33, 35 – 36 and 52 – 63 are concerned, these claims include the limitations of and depend from claims 1, 16, 31, 34, 39 and 42, and so are also believed to have overcome the rejection under 35 U.S.C. §112, first paragraph.

Claim Rejections under 35 U.S.C. § 112, second paragraph

The Office Action has rejected claims 1 – 5, 16 – 20, 31 – 33, 34 – 36 and 39 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Office Action states that the term “a driver” and “the same driver” are not clear as to their meaning. Applicant notes that while claim 39 is mentioned in the list of claims being rejected, at page 7 of the Office Action, it is not individually discussed at page 9. Applicant assumes herein that the substance of the rejection of claim 39 is similar to that of claims 31 and 34.

Applicant believes that the claim amendments discussed above with respect to the claim rejections under 35 U.S.C. §112, first paragraph, apply equally to the rejections to claims 1, 16 31, 34 and 39 under 35 U.S.C. §112, second paragraph. For the reasons discussed above, it is believed that amended independent claims 1, 16, 31, 34 and 39 are no longer indefinite because the terms “a driver” and “the same driver” have been replaced with amended language that particularly point out and distinctly claim the subject matter which applicant regards as the invention. Therefore, the rejection under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, has been overcome. Insofar as claims 2 – 5, 17 – 20, 32 – 33, 35 – 36 and 52 – 63 are concerned, these claims include the limitations of and depend from claims 1, 16, 31, 34, 39 and 42, and so are also believed to have overcome the rejection under 35 U.S.C. §112, second paragraph.

Claim Rejection under 35 U.S.C. § 103

The Office Action has rejected claims 1 – 5, 7 – 9, 10, 12 – 14, 15, 16 – 20, 22 – 24, 25, 27 – 29, 30, 31 – 33, 34 – 36, 39, 42 – 46 and 51 – 55 under 35 U.S.C. §103(a) as being unpatentable over Maeshima et al. (US 6,486,923) (hereafter, Maeshima). Independent claims 7, 10, 12, 15, 22, 25, 27, 30 and their respective dependent claims, and independent claim 51, have been canceled without prejudice.

Therefore, the discussion that follows applies to claims 1 – 5, 16 – 20, 31 – 33, 34 – 36, 39, 42 and 52 – 63, including independent claims 1, 16, 31, 34, 39 and 42.

In view of the amendments made to independent claims 1, 16, 31, 34, 39 and 42, and the discussion that follows below, Applicant respectfully submits that the rejection under 35 U.S.C. §103(a) as being unpatentable over Maeshima has been overcome. Applicant requests that the rejection be withdrawn.

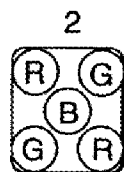
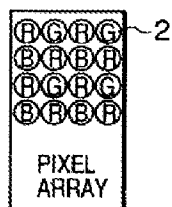
Teachings of Maeshima and the amended independent claims

As noted in the prior Reply, Maeshima discloses a color picture display apparatus that employs an array of light-emitting diodes or other light-emitting elements emitting different colors. (Abstract.) Maeshima describes the color picture display apparatus disclosed therein as follows:

FIG. 1 discloses a color picture display apparatus comprising signal-processing circuitry 20 and a screen 21. The screen 21 comprises an m-by-n array of display units 30 Each display unit 30 comprises a display control circuit 5, a power supply 10 and a plurality of pixel arrays 15. Each pixel array 15 has a matrix of red (R), green (G), and blue (B) LEDs arranged in a regular pattern, with twice as many red LEDs as green or blue LEDs, referred to as the RRGB arrangement. Each LED functions as a separate pixel 2 in the pixel array 15.

(Maeshima, col. 2, lines 55 – 67.) Thus, in a first embodiment of the display apparatus, each LED functions as a separate pixel 2 in pixel array 15. Maeshima further notes that the embodiment described has one LED per pixel, but the invention can also be practiced in an apparatus with more than one LED per pixel, and notes that FIGS. 10A, 10B and 10C show examples of pixel arrays in which each pixel 2 comprises three, four or five LEDs respectively. Each pixel 2 comprises at least one LED of each of the three primary colors. (Maeshima, col. 6, lines 34 – 40.) Of interest to the claims in the subject application is the arrangement of LEDs in FIG. 10C, which is reproduced below along with a portion of FIG. 1 from Maeshima.

FIG.10C



Applicant respectfully submits that Maeshima does not teach the limitations of amended independent claims 1, 16, 31, 34, 39 and 42. Maeshima provides FIGS. 11A, 11B and 11C which show circuits for driving the pixel configurations shown in FIGS. 10A, 10B and 10C respectively. Presumably, FIG. 11C, reproduced below, corresponds to the embodiment shown in FIG. 10C. Maeshima merely states that “FIGS. 11A, 11B and 11C show examples of circuits for driving these pixels. In these examples, the R, G and B signals are sampled at the same timings in the signal-processing circuitry 20, so a larger number of LEDs is required to achieve a given resolution.” See Maeshima at col. 6, lines 41 – 46.

FIG.11C

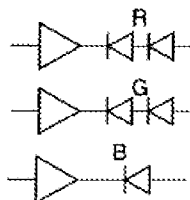


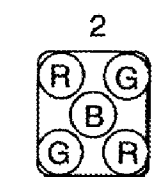
FIG. 11C appears to show that both of the “R” and “G” LEDs in the configuration are driven with the same signal, and the blue LED is driven with its own signal. Neither the figure nor the description provide any teaching as to how two neighboring blue LEDs are driven.

Applicant, therefore, respectfully submits that the amendments to independent claims 1, 16, 31, 34, 39 and 42 overcome the Section 103 rejection.

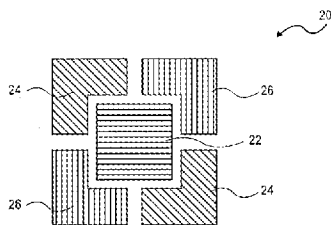
Dependent claims directed to pixel geometry

Finally, Applicant presented arguments in the prior Reply with respect to now-canceled claims 10, 15, 22, 25, 27 and 30 that the Office Action ignored the pixel geometry limitations recited in the independent claims. The arguments presented therein apply equally to the pending dependent claims that add limitations with respect to pixel geometry and so those arguments in the prior Reply are repeated and incorporated by reference herein.

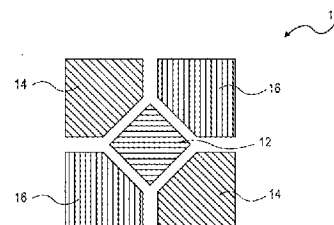
Specifically, the Office Action acknowledges, at page 11, that the “prior art” (presumably the Maeshima reference) does not explicitly teach a square-shaped blue emitter or L-shaped red and green emitters. The gist of the § 103 rejection made in the Office Action is that a person of ordinary skill in the art at the time Applicant’s invention was made, having looked at the pixel layout of LEDs in FIG. 10C of Maeshima would independently be motivated to modify the shapes and arrangement of the LEDs to produce the embodiments shown in Applicant’s FIGS. 1A and 1B, as reproduced below, and as variously claimed in certain ones of the pending dependent claims in the subject application because “if two devices can perform the same function their shape does not matter.” (See Office Action at page 11.)



Maeshima



Applicant



The Final Office Action cites the Fossum patent (US 6,137,100) as showing different shapes and sizes for pixel elements. FIG. 1B of the Fossum reference, reproduced below, indeed shows different shapes and sizes for pixel elements. However, these shapes are simple rectangles and squares, and are not the L-shaped or truncated-corner shapes of Applicant’s pixel elements.

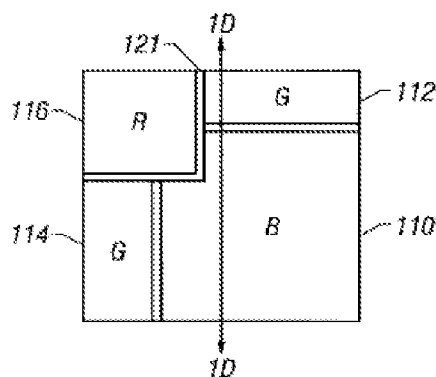


FIG. 1B

Applicant again respectfully submits that the Office Action is using Applicant's specification as a blueprint in hindsight to reach the conclusion that a person of ordinary skill would design a pixel element having an L-shape or with a truncated corner after seeing the pixel shapes in Fossum.

Therefore, with respect to claims 2 – 5 and 17 – 20, the dependent claims that further limit their respective independent claims with limitations as to pixel geometry, Applicant respectfully submits that the Office Action fails to state a reasonable motivation for making the proposed modification to the pixel layout in Maeshima to achieve the pixel shapes recited in the claim limitations in Applicant's claims, and so the Office Action fails to state a *prima facie* case of obviousness with respect to those claims. Applicant requests that the rejection be withdrawn as to these claims.

In summary, Applicant respectfully submits that in view of the amendments made to independent claims 1, 16, 31, 34 and 42, the rejection under 35 U.S.C. §103(a) has been overcome, and Applicant requests that the rejection be withdrawn as to these claims. With respect to claims 2 – 5, 17 – 20, 32 – 33, 35 – 36 and 52 – 63, these claims depend from claims 1, 16, 31, 34 and 42 respectively, and Applicant requests that the rejection be withdrawn as to these dependent claims as well.

Conclusion

The undersigned thanks the Examiner for the extensive and helpful comments in the Final Office Action providing interpretation of the arguments presented in the prior-filed Reply in the subject application, and for the comments provided in an Interview conducted on March 8, 2007 on possible proposed amendments to the claims.

In view of the foregoing amendments and remarks, Applicant respectfully submits that all pending rejected claims are patentable over the cited rejections and art of record and are in condition for allowance. Therefore, Applicant requests the Examiner to reconsider and withdraw the outstanding rejections and pass this application to allowance.

If the Examiner believes a telephone conference would expedite the allowance of the claims, the Examiner is invited to contact Judith C. Bares at (408) 200-7386.

Respectfully submitted,

/Judith C. Bares/

Judith C. Bares Reg. No. 35,824

Dated: March 19, 2007